



AAI Case Reference: 13/2011

AIR ACCIDENT INVESTIGATION SECTOR

INTERIM

SERIOUS INCIDENT FACTUAL REPORT

RUNWAY EXCURSION

**General Civil Aviation Authority
Of
United Arab Emirates**





SERIOUS INCIDENT

NAME OF THE OPERATOR : Alpha Aviation Academy

NAME OF THE OWNER : Global Hedge Resources Inc.

MANUFACTURER : Cessna

AIRCRAFT MODEL : C172S

NATIONALITY : UAE

REGISTRATION : A6-MPL

LOCATION COORDINATES : Lat Long 25°19'42"N 55°31'2"E
(On the runway of Sharjah International Airport)

DATE & TIME : 05th December 2011, 16:55 Local Time

Notes:

1. All times in the report are Local Time (Local time in UAE was UTC+ 4h)
2. The word "Aircraft" in this report implies the aircraft involved in the serious incident
3. The word "Team" in this report implies the Investigation Team



OBJECTIVE

This investigation is performed in accordance with the UAE Federal Act No 20 (1991), promulgating the Civil Aviation Law, Chapter VII, Aircraft Accidents, Article 48, CAR Part III Chapter 3 and in conformity with Annex 13 to the Convention on International Civil Aviation.

The object of this safety investigation is to prevent aircraft accidents and incidents by identifying and reducing safety-related risk. The GCAA AAIS investigations determine and communicate the safety factors related to the transport safety matter being investigated.

Reports are publicly available from:

<http://www.gcaa.gov.ae/en/epublication/pages/investigationreport.aspx>

It is not a function of the GCAA AAIS to apportion blame or determine liability.

The information contained in this draft interim report is derived from the factual information gathered during the on-going investigation of the occurrence. Later interim reports or the final report may contain altered information in the case that new evidence appears during the on-going investigation that requires changes to the information depicted in this report.

Currently the investigation is continuing, focusing more on the MPL program process and oversight, along with the area of improvement opportunities in aircraft maintenance.

Any specific safety issues identified during the course of the investigation will be advised to all parties through the GCAA Safety Recommendations (SR) procedure.

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ABBREVIATIONS

A	Aeroplane
AAIS	UAE GCAA Air Accident Investigation Sector
A&C	Airframe and Engines
AFM	Aircraft Flight Manual
AGL	Airfield Ground Light
AMM	Aircraft Maintenance Manual
AMO	Approved Maintenance Organization
AMS	Approved Maintenance Schedule
amsl	above mean sea level
ATC	Air Traffic Control
ATPL	Air Transport Pilot License
AWOPS	All Weather Operations
CAAP	Civil Aviation Advisory Publication
CAR	UAE Civil Aviation Regulation
CAR-OPS	UAE Civil Aviation Regulation – Flight Operation
CAT	Category
CAVOK	Cloud and Visibility OK
CFI	Certificated Flight Instructor
CG	Centre of Gravity
C of A	Certificate of Airworthiness
COM	Communication
CP	Cadet Pilot
CRM	Cockpit Resource Management
CVR	Cockpit Voice Recorder
Cm	centimeter



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CMR	Certificate of Maintenance Review
CPL	Commercial Pilot License
degs	Degrees
ELP	English Language Proficiency
FAA	Federal Aviation Administration
FDR	Flight Data Recorder
FE	Flight Examiner
FMGS	Flight Management and Guidance System
FTO	Flight Training Organization
GCAA	UAE General Civil Aviation Authority
Hrs	hours
HoT	Head of Training
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
IIC	Investigator in Charge
Kg	kilogram
KIAS	Knots Indicated Air Speed
Km	kilometres
Ldg	Landing
LH	Left Hand
LOFT	Line Oriented Flight Training
LST	License Skill Test
LT	Local Time
M	meters
Mb	Millibars
MCC	Multi Crew Co-operation
MHz	Mega Hertz



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Mins	minutes
MPL	Multi-Crew Pilot Licence
MPM	Maintenance Program Manual
MSI	Major Structural Inspection
MSN	Manufacturer Serial Number
OK	all correct
OMRK	Ras Al Khaimah International Airport
OMSJ	Sharjah International Airport
OMUQ	Umm Al Quwain Airport
PPL	Private Pilot License
QNH	barometric pressure adjusted to sea level
RH	Right Hand
RWY	Runway
ROSI	UAE's Reporting of Safety Incident
SARPS	Standard and Recommended Practices (ICAO)
Secs	seconds
SN	Serial Number
SOP	Standard Operating Procedures
Tach	Tachometer
TM	Training Manual
TO	Take Off
TSO	Time Since Overhaul
TSN	Time Since New
T1	Training Area 1
UAE	United Arab Emirates
UTC	Co-ordinated Universal Time



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VFR

Visual Flying Rules

VHF

Very High Frequency



Synopsis

The United Arab Emirates General Civil Aviation Authority Air Accident Investigation Sector (GCAA AAIS) was informed about the serious incident via the United Arab Emirates General Civil Aviation Authority Reporting of Safety Incident (ROSI) within 24 hours of the occurrence and the (Air Accident Investigation Sector)AAIS of GCAA in accordance with Annex 13 to the Convention on International Civil Aviation immediately formed an Investigation Team (Team). The State of the Manufacturer (United States of America) and the State of last registration (Republic of Philippines) were notified and assigned Accredited Representatives to the investigation. The UAE GCAA lead the investigation and will issue the final investigation report.

On December 05th, 2011, a Cessna C172S aircraft, registration A6-MPL, operated by a (United Arab Emirates) UAE based Flight Training Organisation (FTO), departed from Sharjah International Airport (OMSJ) for a Navigation (NAV) training solo cross country flight, returning to OMSJ, with 1 crew member on board. During landing on Runway (RWY) 30, of Sharjah International Airport, at approximately 16:55L, the aircraft contacted the runway, the right wing lifted and aircraft veered to the left. The pilot was unable to control the aircraft, with the aircraft eventually coming to a stop off the runway and into the sand. Damage was sustained to the engine propeller and the right hand wing.

No crew injuries were experienced during the occurrence.

1 FACTUAL INFORMATION

1.1 History of the Flight

On December 05th, 2011, a Cessna C172S aircraft, registration A6-MPL, operated by a UAE based Flight Training Organisation, departed from Sharjah International Airport (OMSJ) for a solo cross country NAV training flight with one flight crew, cadet pilot, on board. The flight was the cadet pilot's 31st sortie, as a part of his multi-crew pilot license (MPL) training program. The navigation cross country flight was uneventful and included flying over various landmarks in the UAE. During the final landing back at Sharjah International Airport, the aircraft contacted with the runway and soon after, the right wing lifted and subsequently the aircraft veered to the left and departed the runway into the sand. The pilot was unable to control the aircraft and maintain its directional control with rudder and aileron applications.

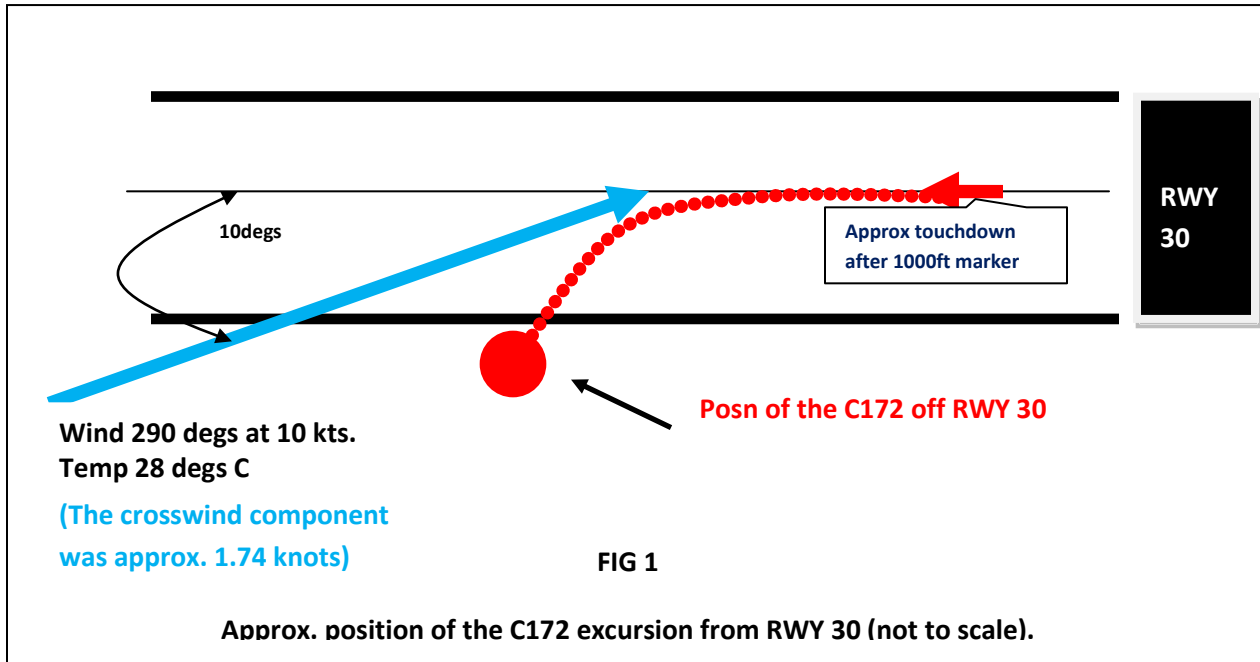
The cadet pilot started the flight phase of the MPL program in January 2011 and had flown 51.8 hours dual and 2.9 hours solo prior to 05/Dec/2011 and on this day it was his first NAV solo flight.

On the day of the serious incident, the cadet pilot reported for duty at 1430L for a planned NAV Solo flight for an ETD of 1530L. He stated that he was adequately rested and prepared for his NAV Solo. His night rest was ten hours as per his statement. Upon his arrival at the FTO, he performed the pre-flight checks, consulted with his Flight Instructor who reviewed his flight plan and cleared the cadet pilot to proceed on the flight.

The flight plan meant that the cadet pilot would fly OMSJ- Hilew Village- Al Dhaid – OMRK- OMUQ – Hilew Village and back to OMSJ with a flight time of 60 minutes (mins).

Take-off was normal from RWY 30 with good weather conditions throughout the flight. The flight had no reported difficulties and on the return leg, 3 miles from final approach into OMSJ, Air Traffic Control (ATC) requested the cadet pilot to vacate RWY 30 after landing via Taxiway D.

The approach for landing on RWY 30 was normal with airspeed of 65kts and 30 degrees flap, as per the pilot statement. Wind speed was 10 knots at 290 degrees (degs) and field temperature of 28 degs C. Touchdown was made after the 1000 foot marker and on the center line of RWY 30.



Upon touchdown, the cadet pilot stated that the aircraft lifted, without his intervention, from the right side and sank back to the ground after hitting the right wing. He then tried to control the aircraft by applying full right rudder and full right aileron at which time he was unable to have any positive impact on the aircraft movement, as the aircraft did not follow his commands. The aircraft continued to veer to the left off the active RWY and came to a stop in the sand, after which, the cadet pilot turned the engine off and contacted ATC.



Fig 2

Sharjah Airport from Google Earth; Approx. position of the C172 after the excursion

The airport fire brigade responded to the scene of the occurrence and at which time the FTO was also contacted. The cadet pilot was without any injury, however he was taken to the Sharjah Airport Medical center for an examination and additional tests as required after an incident or accident.

The aircraft was eventually removed, by towing, from the sand back to the FTO facility with the assistance of Sharjah Department of Civil Aviation.

1.2 Injuries to Persons

Injuries	Flight Crew	Cabin Crew	Passengers	Other	Total
Fatal	-	-	-	-	-
Serious	-	-	-	-	-
Minor	-	-	-	-	-
None	1	-	-	-	1
Total	1	-	-	-	1

1.3 Damage to Aircraft

Damage occurred as noted to the:

1. Engine Propeller
2. Right Hand Wingtip
3. Right hand wing outermost rib together with leading edge skin attaching to the rib.
4. Right hand strobe light lens
5. Right hand NAV lamp lens.

As a result of the propeller damage, and as per the Aircraft Engineer, the Engine required inspection.

(See Appendix 1).

1.4 Other Damage

Except for one Airfield Ground Light (AGL), on the edge of the runway there was no other damage such as buildings, vehicles, navigation facilities, aerodrome structures and installations reported.

(See Appendix 2).

1.5 Personnel Information

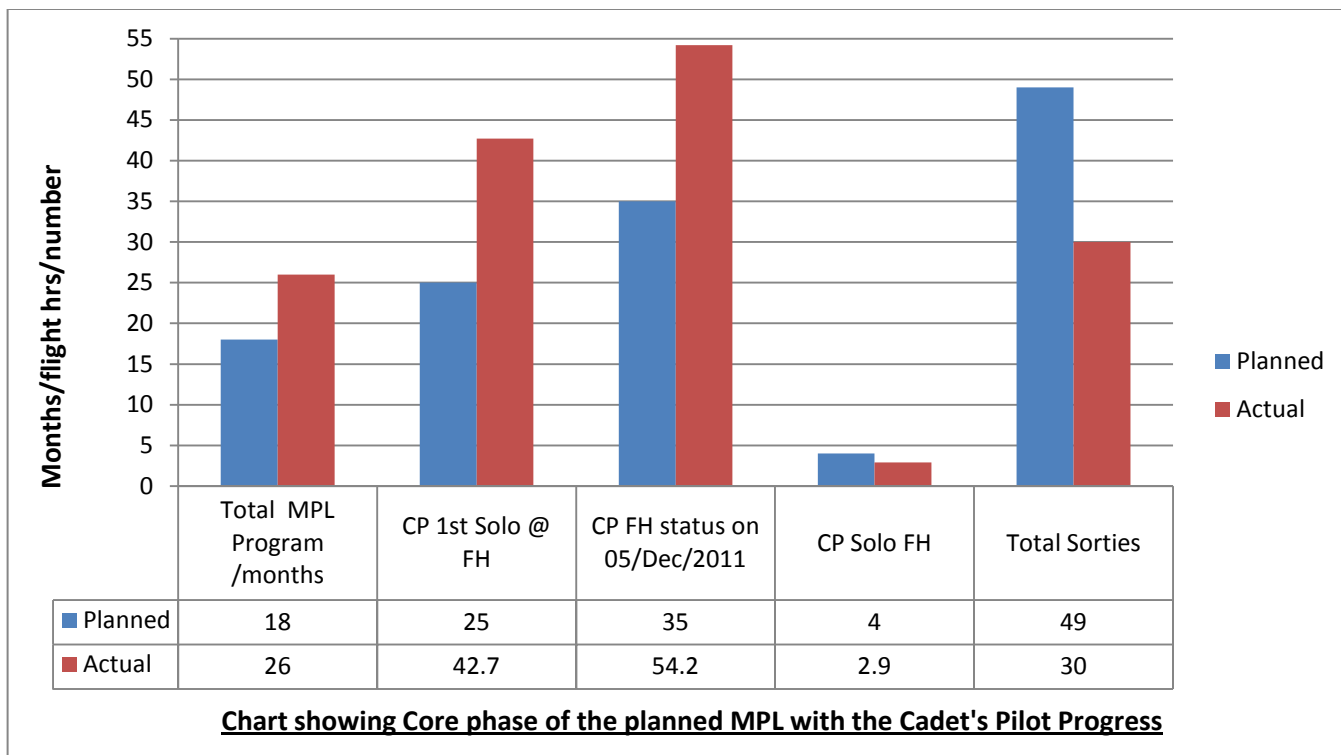
1.5.1 The Cadet Pilot (CP)

Pilot	:	Male, 32 years old
All classroom training and checking	:	Current at the time of the serious incident
Proficiency Check	:	Current at the time of the serious incident
Medical certificate	:	Class 1, valid up to 31 st December 2011
Date enrolled at Flight Training Organisation	:	06 th September 2009
Flight program enrolled for	:	Multi Crew Pilot License (MPL) Course (class 03/09)
Planned Duration ¹	:	14 months (Expected completion date Nov 2010)
Pilapt ² Profile aptitude Score	:	3 ³
ATPL Theoretical Knowledge Completion	:	Certificate issued on 24 th July 2010
First Flight	:	11-January-2011
1 st Solo Flight	:	10-Novemeber-2011 at 42.7 FH
Total Dual hours on all aircraft types	:	54.2 FH (143 landings) all on C172S
Total Solo Hours	:	2.9 FH
Total Hours last 30 days	:	9.7 Dual FH and 2.9 Solo FH (5 landings total)
Last Solo flight	:	1 FH (1 landing) on 23-November-2011
Total Hours last 24 hours	:	0.0 FH
Last flight before the incident	:	1 FH on 01-December-2011 (Dual Flt Sortie 30 with CFI)
Off Duty period	:	More than 24 hrs.

¹ Reference Flight Training Organization memo to Cadet Pilot dated 23rd July 2009 and 2nd memo from FTO dated 16th May 2010.

² The founder of People Technologies is Eugene Burke, the author of the PILAPT[®] tests and psychometric models. People Technologies is a research based consultancy specializing in the development of bespoke human assessment. As the name implies, People Technologies' mission is to help organizations identify and maximize their people resources. People Technologies is best known for its extensive work and research in the area of Aviation Psychology. Research on PILAPT[®] has been published in various scientific papers at conferences worldwide and PILAPT[®] is now recognized as the modern standard for pilot selection. (www.pilapt.com)
 Quote from PILAPT[®]: "Based on several years of research, these PILAPT[®] tests have been designed to ensure that organizations can quickly and easily select applicants that will be safe and competent pilots. PILAPT[®] has been used by military and commercial clients since 1997. PILAPT's[®] ongoing validation process consistently shows accurate prediction of pilot performance. Today the tests are used all over the world in twenty countries and are internationally recognized as best practice in pilot selection. To date, over 30,000 have been assessed with PILAPT[®] in 11 different languages. Not only will PILAPT[®] tests save you time and money at the selection stage, they will also help you to avoid wasted time and resources in training. In an "MPL" (Multi-Crew Pilot Licence) world where there is a shortage of pilot talent, PILAPT[®] is a compelling choice for airlines and training schools who are seeking more advanced and accurate data in order to identify, with confidence, those pilots with the talent to become top performers in the future"- Unquote.

³ A score of 3 equates to low flying potential : Reference FTO Doc # 991230 & Session 070808-1. Based on a score of 1 to 10 (1/2/3 Low, 4/5/6/7 Moderate, 8/9/10 High).



1.6 Aircraft Information

The Cessna 172 Skyhawk is a four-seat, single-engine, and high-wing fixed-wing aircraft with a tricycle landing gear.

The serious incident aircraft was a 172S, first introduced in 1998 and powered by a Lycoming IO-360-L2A piston engine producing 180 horsepower (134 kW). The maximum engine rpm was 2,700 rpm.

As of 2009, only the S model is in production.

1.6.1 Aircraft General Information

Aircraft Type:	C172S
Aircraft Manufacturer:	Cessna Aircraft Company
Aircraft MSN:	172S9137
Aircraft MTOWA:	1162 kgs
Date Registered in UAE	15 th July 2010
Date of first C of A under UAE Registry :	24 th Feb 2011
C of A expiry date:	23 rd Feb 2012
C of A category:	Transport (Passenger)
Aircraft Station License:	Issued on 10 th Jan 2011 and valid



	until 09 th Jan 2012
Insurance Validity Period:	effective from 01 st Nov 2010 to 31 st Dec 2011
Aircraft Total Flight Hours:	4174.6
Last CMR date:	20 th October 2011
Next Due CMR	19 th February 2012
Engine Type:	IO-360-L2A
Engine Manufacturer:	Textron Lycoming
Engines' ESN:	L-30351-51A
Engines' TSO (hrs):	996.9
Propellers	
Propeller Model:	1A170/JHA7660
Propeller Manufacturer :	McCauley Propeller Systems
Propeller SN:	UG23005
Propeller TSN/TSO	240.2 (TSO)

1.6.2 Aircraft C172 MSN 172S9137 Historical Data

The Aircraft was built in 2002 under Type Certificate number 3A12 and its first flight was in August 2002. Most of the flight time was with a flight school in Florida, USA, under registration N533ER.

During the third quarter of 2008, the aircraft was deregistered from USA and was re-registered as RP-C3549 in the Philippines, Certificate of Registration number CN3CR080582. Total aircraft flight hours at de-registration is not confirmed but the last entry in the USA on the Airframe Maintenance Log book on 5th Sep 2008 indicated 3793.0 hours. The Certificate of Airworthiness for RP-C3549 was issued in category Normal and was effective from October 2008 to October 2009.

On 18th June 2009, the aircraft was de-registered from the Philippines, after having flown for 60.3 hours in the Philippines, and on the same day an Export Certificate of Airworthiness was issued for the United Arab Emirates, UAE.

From June to September of 2009, the aircraft disassembly and transportation to the UAE started with the intention of it being re-assembled in the UAE and operate with the Flight Training Organization.



At the beginning of October 2009, the aircraft reassembly started at a UAE based Approved Maintenance Organization (AMO) and eventual had its first flight in the UAE as well as going into service with the FTO in February 2011. The first Certificate of Registration was issued on 15th July 2010 with registration markings A6-MPL and the first Certificate of Airworthiness in Transport Passenger category was issued on 24th February 2011.

1.6.3 Assembly of Aircraft C172 MSN 172S9137 at UAE

Work Order Reference:	ALA/09/A/001
Reason for work order:	Assembling of Aircraft A6-MPL
Scope of Work:	Carry out as required (Wording from the Cover Sheet)
Maintenance Program Manual ref:	GCAA/AMS/185 Issue 1 Rev 0. Dated 01 st April 2010
Major inspections Performed:	1000 Hr & Annual & 50 Hr Inspections
Release Certificate Authority:	GCAA
Aircraft Maintenance Manual Ref:	Cessna C172 AMM ⁴ .
Export C of A from Philippines issued:	18 th June 2009
Aircraft Flight Hours:	3853.3
Start date of Assembly:	06 th October 2009
Last Weight Check:	25 th January 2010 ⁵
Last compass swing carried out:	14 th February 2010 ⁶
CRS for ALA/09/A/001 signed on:	20 th January 2011
Certificate of Fitness for Flight issued:	09 th February 2011
Expiry Date of Fitness for Flight:	16 th February 2011
Test Flight completed on:	11 th February 2011
Certificate of Registration issued:	15 th July 2010
Certificate of Airworthiness issued:	24 th February 2011

Work Order ALA/09/A/001 dated 06th October 2009 was reviewed and it was noted that there was no Maintenance Contract/Agreement in place. During the investigation the Team was unable to reveal evidence of an agreement or contract. The work scope to be performed on the reassembly of the aircraft and any other inspections was not defined on the work order reference at the time the work commenced on 06th October and evolved during the rebuild of the aircraft.

A review of the aircraft maintenance log revealed that there was no indication of the disassembly of the aircraft that was performed before it was shipped to UAE from the Philippines⁷ to the UAE.

⁴ No revision date of the AMM used was documented on the work pack nor any of the work cards.

⁵ Reference AMO document card no: 0520/1 of Work Order ALA/09/A/001. The assembly of the aircraft was still on going as the work scope was still evolving even after 25th January 2010.

⁶ As per the FTO approved Maintenance Program, GCAA/AMS/185, Compass swing is due every 1 year/12 months. No evidence that the compass swing was performed after 14th February 2010.



There was no traceability for serviceability and serviceable labels of parts reassembled on the aircraft. As per statements from the AMO and the FTO, the aircraft was received at the AMO with major parts disassembled. However, all new parts replaced on the aircraft had serviceable labels attached. Some work cards and the major reassembly of the aircraft, had no cross reference to the maintenance manual. The actual major reassembly consisting of 462 specific tasks, were all signed off on two dates, 17th January 2010 for mainly Avionics trade and 20th May 2010 for all A&C trade.

Many of the major reassembly work involving flight controls, control cables and critical assembly points on the aircraft had no reference of duplicate inspections, as per the GCAA CAR Part V Chapter 2 Section 9 requirement .

One of the certifying engineers, who signed off for the major reassembly work on 20th May 2010 and other work before 09th Dec 2010, was not in possession of a UAE type rated licence on C172 aircraft. His type rating on the C172 was endorsed on 07th December 2010 by the UAE GCAA and the AMO issued the company authorization after that on 09th Dec 2010. This certifying engineer mentioned in, was not an employee of the AMO and there was no evidence that he was contracted to the AMO⁸.

Based on a statement received from an AMO's employee, the reassembly of the aircraft was not completed by the A&C engineer who started the work and this A&C engineer was not in possession of a UAE GCAA licence. The work was then completed and signed off by the A&C engineer who was employed in 2010 by the FTO as mentioned earlier.

The weight check of the aircraft was performed about one year before the final assembly of the aircraft was completed and there was no evidence that the compass swing was performed after it was first done on 14th February 2010. As per the approved Maintenance Program, GCAA/AMS/185, this should be carried out every 1 year/12 months.

The aircraft was eventually test flown on 11th February 2011 after being approximately 15 months under maintenance, with no defects reported by the flight crew during the test flight.

⁷ For info: As per UAE GCAA CAR Part V Chapter 2 section 13.1, an export C of A is only issued for a complete aircraft.

⁸ Reference UAE GCAA CAR Part V Chapter 3 (CAR145) section AMC 145.30(d) Personnel Requirements which states that: "Has sufficient staff means that the organization employs or contracts such staff of which at least half the staff that perform maintenance in each workshop, hangar or flight line on any shift should be employed to ensure organizational stability. Contract staff, being part time or full time should be made aware that when working for the organization they are subjected to compliance with the organization's procedures specified in the maintenance organization exposition relevant to their duties. For the purpose of this sub-paragraph, employed means the person is directly employed as an individual by the maintenance organization approved under CAR 145 whereas contracted means the person is employed by another organization and contracted by that organization to the maintenance organization approved under CAR 145."

1.6.4 Aircraft Maintenance Program for A6-MPL

Maintenance Program Manual Reference:	GCAA/AMS/185 approved by GCAA on 29 th Apr 2010
Last Inspection:	50 hrs inspection completed on 17 th November 2011 at A/C Total Time of 4162.2 hours
Next Inspection Due:	100 hrs inspection at Tach Time 503.4 hours as per Aircraft Technical log # A00283 entry on 17 th Nov 2011 ⁹ .
Last Major Check:	200 Hour Inspection completed on 13 th Aug 2011 at A/C Total Time of 4025.0 hrs.
Last CMR:	Issued on 20 th October 2011
Next CMR Due:	19 th February 2012

1.6.5 Aircraft Maintenance Contract for A6-MPL

As the FTO was not operating under part M nor was approved as a CAR 145 AMO organization, a Maintenance Contract for Engineering and Maintenance Support was signed between the FTO and a UAE based AMO with the dates of coverage as noted:

1 st Contract:	Signed on:	24 th March 2010
	Expiry date:	23 rd March 2011
2 nd Contract:	Signed on:	31 st October 2010
	Expiry date:	30 th October 2011

At Sharjah, the AMO was approved to perform up to 50 hrs inspection and Line Maintenance tasks. On the date of the serious incident, 05th Dec 2011, there was no maintenance agreement in place between the FTO and any other AMO as the 2nd Maintenance and Engineering Contract expired on 30th October 2011. Also, all the work performed and certified by the Engineer for the A&C trade for the duration of the Maintenance and Engineering Contract, was an employee of the FTO but issued an approval from the AMO¹⁰.

1.6.6 Inspection Program as per MPM

As the Flight Training Organization was not approved to carry out its own aircraft maintenance, there was a signed agreement between the FTO and a UAE based GCAA approved CAR 145 Approved Maintenance Organisation (AMO) to carry out all maintenance on the two C172s operated by the FTO. However, the FTO was responsible to obtain the necessary approvals from the GCAA with regards to the Maintenance Program.

⁹ The entry in the Aircraft Technical log for the next inspection due should have been for 200 hour inspection as the last 200 hr inspection was done at Aircraft hrs of 4025.0 and the aircraft last inspection, 50 hr, was done at Aircraft hrs 4162.2.

¹⁰ See foot note # 8.

As per the maintenance agreement and the approvals granted to the AMO by the GCAA, Line maintenance and 50 hour inspections were approved for Sharjah with all other checks above 50 hours to be done at the AMO facility located in Abu Dhabi.

The Operator's Approved Maintenance Program Manual for the two Cessna C172s has been detailed in the Operator's AMS No. GCAA/AMS/185 document, Issue 1, Rev 0 that has been approved by the GCAA on 01st April 2010.

The scheduled inspection of the Aircraft was defined as the following:

1. Check A - Pre Flight Schedule
Done before each flight with a new pilot and signed by the Flight Instructor or CFI (or his deputy) IAW Section 5.1 of the Maintenance Schedule¹¹.
2. Not to exceed Flight Hours Inspection of 50 (or not to exceed 60day), 100 (or not to exceed 12months), 200, 400, 600 and 1000 (or not to exceed 3 years).
3. Out of Phase Maintenance Program as per the Approved Maintenance Program, GCAA/AMS/185.
4. C of A Test Flight
To be carried out at each annual renewal of Certificate of Airworthiness.

Until the day of occurrence, the Aircraft last inspection was 50 hrs inspection, which was accomplished on 17th November 2011. On this inspection, there were no defects reported.

1.6.7 History of Defects from Feb 2011

On 31st March 2011, A/C Total Time of 3934.4 hrs, at Sharjah International Airport, a student pilot from the FTO on his first solo flight, during the landing phase, the aircraft bounced on the initial touchdown followed by a severe and uncontrollable veer to the left and finally a nose down pitch which resulted in a propeller strike¹².

The repair was completed and the major parts replaced were the engine, propeller, new mounts and other items as mentioned on the Airframe Maintenance Log. The aircraft CRS was eventually signed on 20th June 2011.

A review of Aircraft Technical Log from 19th October 2011 and the recorded Airframe Maintenance Log from June 2011 revealed, other than the schedule maintenance checks like 50, 100, 200 hour checks, there were no significant defects on A6-MPL. In addition, there were no defects noted on the Damage/Repair Mapping chart, form No FTO/ENG/010, as well as no defects on the Acceptable Deferred Defect List (ADD), Form FTOM 13.

¹¹ The Daily Check was removed from the maintenance program by permission of the UAE GCAA on 21st Nov 2011 ref GCAA Doc # 21292/55391/DXB/AW/11.

¹² Reference GCAA ROSI-3340-110331-AOAW and Flight Training Organization CFI report dated 31st March 2011.

From 19th October 2011 till the date of the incident, the aircraft had accumulated approximately 50 flight hours with numerous landings and the only defect of significance, was the replacement of the Attitude Gyro as it could not stabilize. This defect was reported and rectified on 28th November 2011 by replacement of the unit. On the day of the incident, 05th December 2011, the aircraft was first flown by a fellow Cadet Pilot on a scheduled sortie, S37, on a NAV Solo flight for a block time of 1.42 hours and there were no reported defects in the Aircraft Technical Log.

1.6.8 Mass and Balance

The last weight and balance was performed on 25th January 2010 with the weight report showing nil significant changes to the C of G. On the day of the incident, the following chart depicts the center of gravity moment envelope acceptable range and the calculations done by the Cadet Pilot:

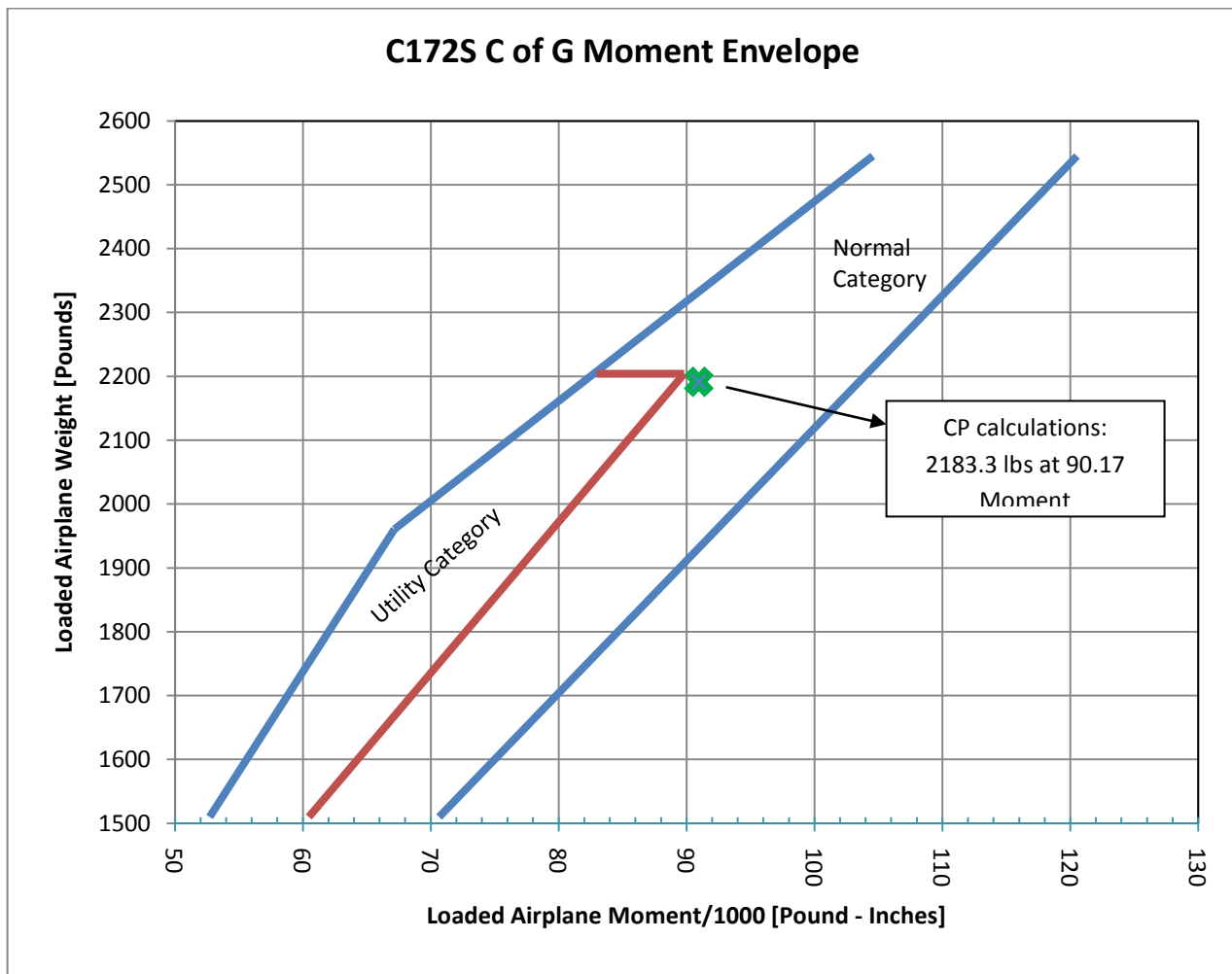


Figure 5 Aircraft C of G Envelope on the Day¹³

¹³ Reference FTO OM Part C Section 3 Loading 3.1.11 and FTO Form CS 24 (Dispatch Release & Authorization Form) signed on 05th Dec 2011.

1.7 Meteorological Information

The weather report as per ATC report at Sharjah International Airport at 12:52 UTC at the time of the incident was as follows ¹⁴:

Wind : 290 degrees / 10 knots
Cloud and Visibility : CAVOK
Temperature : 28 degrees centigrade
Runway Condition : Dry
QNH : 1016 mb
Forecast : No significant change
Turbulence : No ¹⁵

1.8 Aids to navigation

The flight was performed under VFR and no aids to navigation were utilised. As per the FTO, the flight plan submitted for this flight was as per the Operations Manual Part C section 6.1, VFR NAV 3 as shown. The flight would have taken the CP from OMSJ—AL HILLEW—AL DHAID—OMRK—OMUQ—AL HILLEW back to OMSJ. This was reviewed and approved by the Flight Instructor.



¹⁴ Reference GCAA ATC ROSI-5855-111205-ATC and Sharjah ATC report.

¹⁵ Reference GCAA ATC ROSI-5855-111205-ATC , an A320 had taken off approximately 4 minutes before A6-MPL landed.

1.9 Communications

From the transcript, the CP had to extend downwind for approximately 1min 30 secs due to delay with an A320 departure. After the A320 departed, the CP was cleared to continue the approach for landing and landed approximately 4 mins after the A320 departure. The CP was also advised by ATC to vacate the runway at Taxiway Delta (D).

16:48:40: ATC had just given clearance to continue approach for an incoming flight TRV3320 into OMSJ.

16:49:00: Runway excursion of the C172

16:49:09: ATC first informed the inbound traffic to continue approach and soon after they were requested to perform a go around as the C172 had departed the runway.

ATC then contacted Sharjah airport Rescue 1 and Safety 1 to proceed to the aircraft.

16:51:31: Contact made to the CP by ATC at and the CP responded to ATC a few seconds after informing that he was okay.

1.10 Aerodrome Information

Sharjah International airport has the one runway with the following physical characteristics and declared distances:

Designations RWY NR	TRUE & MAG BRG	Dimensions of RWY(M)	Strength (PCN) and surface of RWY and SWY
12	122° / 121°	4063 x 45	asphalt with 300 M Concrete 80 / F / B / X / U 70 / R / A / W / U
30	302° / 301°	4063 x 45	asphalt with 300 M Concrete 80 / F / B / X / U 70 / R / A / W / U

RWY Designator	TORA (M)	TODA (M)	ASDA (M)	LDA (M)
12	4063	4063	4063	4063
30	4063	4063	4063	3764

The Team was not made aware of any reports nor NOTAMs indicating that there were any problems associated with the runway surface condition.

1.11 Flight Recorders

The Aircraft weight is below 5700kg, and according to CAR Part IV – CAR OPS 1.470, it is not required to be equipped with FDR (Flight Data Recorder) nor CVR (Cockpit Voice Recorder).

The Aircraft was not equipped with FDR or CVR.

1.12 Wreckage and impact information

There were no reported pertinent material failures and component malfunctions, prior to or during the occurrence.

1.13 Medical and Pathological Information

Medical and toxicological test of the Cadet Pilot was performed after the serious incident and results did not reveal any abnormality. Also, there was no evidence that physiological nor fatigue factors affected the pilot's performance.

1.14 Fire

There was no evidence of fire in flight or after the occurrence.

1.15 Survival aspects

For the purpose of this occurrence there was no search activity involved. Additionally there was no evacuation performed and the pilot exited the aircraft by his own means.

1.16 Tests and research

Aircraft Steering, Rudder, ailerons and Brake systems:

The aircraft steering, rudder, ailerons and brakes and tires were all visually examined during the investigations and there was no abnormalities found.

In addition, all previous flights were performed without any defects being reported on any flight controls, brake system and steering system.

1.17 Organizational and Management Information

1.17.1 Flight Training Organization

In 2007, the Flight Training Academy was launched as a result of a joint venture between an airline and an international aviation group with the intention of training ab-initio airline pilots under the new ICAO Multi Crew Pilot License (MPL). Being the launch Academy in the UAE for the MPL program, the GCAA as the local Authority were also involved from the onset.

As the UAE based airline had a demand for pilots, the location of the Academy was chosen to be in Sharjah, UAE, with the model of this Academy being based on the already existing institution in the Philippines, Clark Aviation.



The Academy at Sharjah was intended to operate with 3 sections: the Ground School offering ATPL knowledge, the Flight Operations (including Maintenance) for the Core Flying Phase of the MPL, and the Simulator Department which offered the MCC phase of the MPL Course. The last two phases of the course were initially planned to be given by airline.

In April 2008, the GCAA granted approval to the academy to become a flight training organization certified as by GCAA as per under CAR Part II, for training pilots but limited to Multi Pilot Licence (MPL) Ground Course only, as the academy was yet to obtain any aircraft of its own and did not have the required post holders and facilities.

In 2009, the first batches of cadet pilots started their training and were all selected based on requirements established by the academy including the use of the PILAPT computer based program. Even though the establishment of the academy was to satisfy the pilot needs of the low cost airline, the selection process of cadet pilots was performed by the academy, without evidence presented to the Team during the investigation that the low cost airline was actively involved.

Until the latter part of 2010, the Academy did not have any training aircraft of its own and as the GCAA approval was limited to ground school only, many of the initial batches of students, for the core flying phase of the MPL program, were sent to a training organisation based in Philippines,.

The first training aircraft, C172S, arrived at the academy in November 2010 and the second C172S arrived at the end of February 2011, however this second aircraft was restricted to VFR flying only.

As stated in an by the FTO employee and revealed during the investigation, delays with the core flying phase of the MPL program were affected as a result of no aircraft being available till towards the end of 2010. With the introduction of the two Cessna C172S, the flight training phase of the program was eventually shifted from, Philippines, to the UAE. Even so, the program continued to be affected and experienced delays with flight training core phase due to the arrangement at Sharjah Airport with refuelling, start procedure restrictions, air traffic congestion and flight slot timings for training flights.

By March 2011, both C172S aircraft were grounded as a result of landing incidents involving Cadet Pilots and the core flying phase for was stopped for approximately ten weeks. Both aircraft eventually returned to service after repairs with the last one entering service at the end of June 2011.

The FTO enhanced its operation following several recommendations made by the GCAA as a result of the incidents. These included new procedure for a student on first solo, classroom training about wake turbulence, cross wind landing, control of aircraft after landing as well as handling an unstable approach.

In the meantime, the FTO sought GCAA's approval to use the services of a flight training school in Australia whereby the cadet pilots would perform their core flying training of the MPL program. This approval was granted by the GCAA in August 2011 and the FTO decided that the entire flight operations would be shifted to Australia, from UAE, in order to complete the core flying phase.

Flight training continued at the Sharjah Base till the program shifted to Australia and was eventually put to a complete stop by the GCAA when the 3rd landing occurrence occurred with A6-MPL on 05th December 2011.

In addition, during a meeting following the 3rd serious landing incident, between the FTO and the GCAA, the FTO was instructed to cease all new enrolments and establish a more effective management structure. The GCAA also expressed concerns about the FTO deficiencies with their operations, safety, training and communications.

1.17.1.1 Flight Training Organization Management

During the course of this investigation and with regards to what is stated in GCAA CAAP 33, Procedures For The Approval & Re-Approval Of Aviation Training Organizations (ATO), under paragraph 6¹⁶, Management & Staffing, it was noticed that the FTO management post holders were not satisfactory established and some of the candidates presented to the GCAA did not meet the requirements and thus were not approved for the post holder positions applied for. This was also highlighted in audit findings by the GCAA in December 2009. At the beginning of 2010, the Chief Flight Instructor, CFI, and a Head of Training, HoT, was appointed and in June 2010, Manager of Maintenance was appointed and approved by the GCAA. By the end of 2010, both the CFI and HoT positions were relinquished and new appointments made which was approved by the GCAA. The HoT position was again changed and in April 2011 a new appointment was made which lasted until January 2012 when a new Hot was selected and appointed.

1.17.1.2 Flight Training Organization Training Instructors

A review of the FTO Training Manual, which was approved by the GCAA, was in compliance with International Standards. However, as the MPL program was new to the UAE and as the FTO main course of training was in MPL, the certificates presented to the investigation team of the instructors who were based at Sharjah showed that there was some exposure to the MPL program.

1.17.1.3 Flight Training Organization Safety Management System (SMS)

During one of the GCAA Audits in November 2010, one of the findings was that the FTO did not have established a Safety Management System as it was a requirement of GCAA CAR Part X. The target date for SMS implementation was 31st December 2010.

As the FTO did not have any qualified staff, through the FTO Quality Manager, a request for deferment till end of December 2011 was submitted to and granted by the GCAA based on an accepted phased time line of

¹⁶ GCAA CAAP 33 paragraph 6 states: " The GCAA require that an adequate number of qualified, competent staff are to be employed and that the management structure ensures supervision of all grades of staff by persons having the necessary experience and qualities. The GCAA will place particular emphasis on the qualifications and competence of all training staff in their specialization and in training techniques. All training staff must be acceptable to and approved by the GCAA. The posts of Accountable Manager (AM), Head of Training (HoT), Chief Flying Instructor (CFI), Chief Synthetic Flight Instructor (CSFI), Quality Manager (QAM) and Chief Ground Instructor (CGI) at an ATO offering modular and or integrated courses of training shall all be filled by persons who are qualified in accordance with CAR Part IV and this CAAP, and who are subsequently approved by the GCAA. At ATO's offering integrated courses of training, one person shall not hold two or more of the named posts simultaneously unless specifically approved to do so by the GCAA for a limited period not to exceed 30 days. ATO's offering modular courses of training only, may combine posts; however approval must be obtained from the GCAA. This approval will be based on the number of instructors employed, cadet numbers (actual and forecast) and the scope (number of different course approvals) of the organization. In general, at ATO's employing less than five instructors, the positions of HoT and CFI or CFI and CGI may be combined. Where posts are combined, the post holder shall meet the qualification requirements for each of the posts held. At least one of the nominated post holders shall be employed full time. For the purposes of modular courses, this shall be taken to mean that the full time staff member shall be available for the duration of the approved course without interruption from any other employment."

implementation. At the time of the 3rd incident in December 2011, the level of preparedness and implementation of the SMS at the FTO could not be ascertained.

1.17.1.4 Aim of the Flight Training Organization Course – Multi-Pilot Licence Program

Multi-Crew Pilot Licence Course¹⁷:

As per the FTO, the aim of the course is to ensure a level of knowledge and skill appropriate to become a co-pilot on a multi crew aircraft type, A320. The program consisted of the following training phases with a planned completion schedule of 62 weeks¹⁸:

1. Core Phase Flying Skills:

840 Hours of Ground school and 70 Flight Hours on C172S. The aim of the this phase is to ensure a level of competency in the handling and management of light aircraft in a professional environment together with an introduction to non-technical skills and Threat and Error Management. This comprised of ATPL Ground School for 28 weeks with 70 hours flying in 16 weeks for total training time of 44 weeks.

2. Basic Phase:

60 Flight Hours on FNPT-2 Simulator. The aim of this phase is to complete the theoretical knowledge aspects of the MPL as required by CAAP 37. Multi-Crew Cooperation (MCC) theoretical knowledge instruction will precede the simulator flying, which is aimed to further develop skills and knowledge /operation of turbine powered aircraft in a multi-crew environment. This comprised training on MCC, CRM for 1 week and 60 flight hours on FNPT-2 MCC Turbine Complex Aircraft for 7 weeks. Total 8 weeks.

3. Intermediate Phase:

The aim of this phase is to enhance competency in the IFR environment by the use of Line Orientated Flight Training (LOFT) in a complex or type specific turbine 2 crew operations with advanced non-technical skills and Threat and Error Management. This comprised A320 ground school for 2 weeks, FMGS for 1 week and 48 flight hours of 2 crew LOFT. Total 6 weeks.

¹⁷ The GCAA CAAP 37 under Appendix 1 states :

1. The aim of the MPL integrated course is to train pilots to the level of proficiency necessary to enable them to operate as copilot of a multiengine multi-pilot turbine powered air transport aeroplane under VFR and IFR and to obtain an MPL.
2. Approval for an MPL training course shall only be given to an approved training organization that is part of a commercial air transport operator certificated in accordance with CAR-OPS or having a specific arrangement with such an operator. The license shall be restricted to that specific operator until completion of the airline operator's conversion course.

¹⁸ As per the FTO TM, the course duration is approximately 62 training weeks, and does not include leave, public holidays etc., and are subject to satisfactory progress and factors outside the control of the FTO.

4. Advanced Phase:

The aim of the Advanced Phase is to complete the transition to the A320 together with AWOPS training and aircraft training so that the candidate is assessed as having a high probability of successfully completing the Airline Operators Conversion Course (OCC) within a normal time frame. This comprised 15 x 4 hrs full flight simulator detail including AWOPS & LST for 3 weeks followed by 2 flight hours of flight landing practice on A320 for a minimum of 12 landings.

1.17.1.5 Pre-entry requirements and assessment for selection for the MPL Course

The requirements stipulated by the FTO as mentioned in the training manual were:

1. Have a sufficient level of education to permit on schedule assimilation of the theoretical and practical knowledge requirements of the course.
2. To demonstrate knowledge of English language competency to the ICAO level 4 prior to licence issue
3. To demonstrate an aptitude for a career as a professional airline pilot.
4. To hold a Class 1 Medical prior to course entry.

Assessment for Selection

1. Education will be assessed by review of paper qualifications and written tests in mathematics and English comprehension.
2. English language competency will be assessed during the initial interview. The candidate will be required to read a passage of technical English
3. Aptitude will be tested by hand/eye coordination exercises, psychometric and numeracy tests using the Pilapt system.

The initial selection of all cadet pilots was based on the criteria established by the FTO and included the use of an aptitude test. From the inception of cadet pilots, the FTO used the Pilapt system and then later switched to a new system called COMPASS. The involved CP was tested using Pilapt.

The results of the Pilapt test was presented electronically, however, during the investigation, the FTO did not have a qualified person who was conversant with the results of the Pilapt.

1.17.2 UAE General Civil Aviation Authority (GCAA)

The National Civil Aviation Authority for the UAE, GCAA, is responsible as the regulator in having oversight with all similar Aviation training organizations in the UAE.

The GCAA references are in the GCAA CARs Part II, GCAA CARs Part IV – special Purpose Operations (Approved Flying Schools) and the applicable portions of the GCAA CAR-OPS including GCAA CAAP 33, Aviation Training Organizations.



Civil Aviation Advisory Publication, CAAP 37, was issued in August 2010 by the GCAA as there was no previous document addressing MPL in the UAE. This gave guidelines and policy regarding MPL licences in the UAE. CAAP 37 is based on reference documentation in existence and publications from ICAO and EASA. There are neither any deviations from ICAO Annex 1 SARPS nor additional requirements. Some National Authorities that has approved MPL training like European Aviation Safety Agency (EASA), Civil Aviation Administration of China (CAAC), Civil Aviation Safety Authority (CASA) of Australia and Transport Canada Civil Aviation (TCCA) do specify additional requirements in their regulations pertaining to MPL Instructors, Beta Testing, arrangements between the ATO/FTO and Operator and implementation monitoring system.

Additional emphasis was given to the Flight Training Organization by the GCAA as this was the first school in the UAE to conduct the Multi-Crew Pilot Licence (MPL) program.

In April 2008, the GCAA granted approval for the FTO to start the ground school training for the MPL program as the FTO was yet to obtain its own training aircraft and over the following 3 years, held several audits, meetings and recommendations with regards to the facilities, management structure, training requirements, post holders and manuals.

As reported by GCAA, meetings were held between the FTO and the GCAA and concerns were expressed by the Authorities due to audit findings and corrective actions. As a result, the GCAA stopped all training in June 2010 due to non-compliance and action plan failures by the FTO. This was again repeated in February 2011 whereby the GCAA revoked the operational approval for the Sharjah Base. In September 2011, the GCAA issued a final warning to the FTO with specific reference to the capabilities of the Head of Training. A follow up meeting between the GCAA and the FTO was held in November 2011 as the GCAA was not happy with the action taken by the FTO.

Shortly after the 3rd serious incident that occurred on 05th December 2011, a meeting was convened between the GCAA and the FTO post holders and the GCAA advised the FTO that all flight operations at Sharjah was revoked till further notice.

Mention was made by the GCAA in April 2011 in the conclusion remarks to a meeting, Operational Update of the FTO, between the GCAA and the FTO whereby the GCAA mentioned that the MPL program training course shall only be given to an approved training organization that is part of a commercial air transport operator or having specific arrangements with such an operator. The GCAA also commented that the resources of the operator are utilized in the training and that the integration and philosophy of the company be ingrained from the beginning of the MPL program.

However, during the investigation, there was no evidence presented to the team in regards with meetings between the airline and the FTO nor between the GCAA and the airline and the FTO regarding the audit findings and concerns of the National Authority.

1.17.3 The Airline

The entire program of the FTO was based on the Airline involvement with the MPL program as signed during the agreement between the Flight training group and the airline in 2007. Successful Pilots from this training would have eventually been qualified as a co-pilot to fly the airline's A320 fleet.

However, it was noticed during the investigations, that the airline was not involved with the selection, testing and monitoring of potential cadet pilots. The airline did get involved after the cadet pilots had completed the intermediate phase and during the A320 phase of the training. On subsequent visit to the FTO, the Human Resource section of the FTO commented that the airline had taken the decision that the final selection of cadet pilots, after the FTO testing process was completed, would be done by the airline. As the enrolment of the cadet pilots was stopped by the GCAA after the 3rd incident in December 2011, the investigation team could not verify if the selection process had changed.

1.17.4 The Aircraft Maintenance Organisation, AMO

The GCAA approved AMO, which was capable to perform the task, based in Abu Dhabi, which was selected by the FTO to carry out the reassembly and maintenance of the two Cessna C172S, became involved with the FTO when the first aircraft was sent to the AMO in October 2009.

The investigation team was not presented with evidence of any maintenance contract between the FTO and the AMO during the start of assembly of the two C172S in October 2009. As the FTO was not operating under part M nor was approved as a CAR 145 AMO organization, a Maintenance Contract for Engineering and Maintenance Support was signed between the FTO and the AMO with the dates of coverage as noted:

The AMO did have the required experienced and qualified trained aircraft maintenance engineers to carry out the contracted work both at Sharjah as well as at the AMO base in Abu Dhabi.

It should be noted that during the investigations, the AMO did use the services of the employed FTO aircraft maintenance engineer to carry out the final certification of both C172S reassembly as well as to do certification at Sharjah and whenever work was performed during schedule maintenance at the AMO base.

1.18 Additional Information

1.18.1 MPL Program

In Accordance with the ICAO Doc 9868 MPL is the first airline-dedicated professional pilots license, derived from a need formally recognized in 1982, with the intention of guiding students seamlessly from ab-initio training to airliner type rating, using simulation designed for multi-crew training. MPL is a state of the art ab-initio airline pilot training program, seamlessly integrated with an airline type rating, with continuous multi-crew focus. The objective is to “begin with the end in mind” (the qualified airline First Officer – operations-ready).

In addition MPL implementation is part of the IATA Training and Qualification Initiative (ITQI) comprising MPL, Pilot Aptitude Testing (PAT), Evidence Based Training (EBT), Instructor Qualification (IQ), Flight Simulation Training Devices (FSTD), and Engineering & Maintenance (E&M).

Competency-based training throughout the MPL program is the key to its success. A set of nine knowledge, skills and attitudes (KSAs) required for airline pilots have been developed by the IATA Training and Qualification Initiative project team from industry-wide research. ICAO requires that MPL training be validated from output performance to promote continuous improvement adaptive to industry change. Other mandated features are


- (a) Upset Prevention and Recovery Training (UPRT)
- (b) ATC training

- (c) New Instructor Standards
- (d) New Flight Simulation Training Device (FSTD) criteria, published in 2009 in ICAO Doc 9625, and
- (e) Embedded Threat and Error Management (TEM) strategies throughout the training process.

MPL represents a major safety-centered upgrade to airline training which IATA encourages airlines to adopt¹⁹. Increasingly persistent concerns are voiced that the mix of experience loss + industry expansion + reduced career interest will increase the accident rate (which has plateaued for the first time during the last 10 years). MPL is ready to be adopted and implemented by ICAO Contracting States and IATA members, in the interests of long-term safety. Worldwide, in 2010, 30 States had adopted MPL with over 1100 MPL students and just under 300 MPL graduates.

ICAO Annex 1 and ICAO Doc 9868 gives clear guidelines for an ATO and the National Authorities to follow in implementation of an MPL program. In ICAO Doc 9868, Procedures for Air Navigation Training, Chapter 3, Competency-based training and licensing for the multi-crew pilot licence (MPL), Appendix 1, as shown below, has the training modules required to be covered at the FTO.

MULTI-CREW PILOT LICENCE TRAINING SCHEME (ICAO Doc 9868, Appendix 1):

MPL Training Scheme					
Minimum 240 hours of training including PF and PNF*					
<i>Phase of training</i>		<i>Training items</i>	<i>Flight and simulated flight training media — Minimum level requirement</i>		<i>Ground training media</i>
 Integrated TEM principles	Advanced	<ul style="list-style-type: none"> • CRM • Landing training • All weather scenarios • LOFT • Abnormal procedures • Normal procedures 	Aeroplane: Turbine Multi-engine Multi-crew certified FSTD: Type IV	12 take-offs and landings as PF** PF/PNF(PM)	<ul style="list-style-type: none"> • CBT • E-learning • Part-task trainer • Classroom
	Intermediate	<ul style="list-style-type: none"> • CRM • LOFT • Abnormal procedures • Normal procedures • Multi-crew • Instrument flight 	FSTD: Type III	PF/PNF(PM)	
	Basic	<ul style="list-style-type: none"> • CRM • PF/PNF complement • IFR cross-country • Upset recovery • Night flight • Instrument flight 	Aeroplane: Single or multi-engine FSTD: Type II	PF/PNF(PM)	
	Core Flying Skills	<ul style="list-style-type: none"> • CRM • VFR cross-country • Solo flight • Basic instrument flight • Principles of flight • Cockpit procedures 	Aeroplane: Single or multi-engine FSTD: Type I	PF	

¹⁹ Stated by Captain Dieter Harms, IATA Lead for MPL implementation and former CEO Lufthansa Flight Training, “By 2018, the majority of ab-initio pilot trainees destined for airlines will be trained via the new competency-based model; provided that the international airline training and regulatory community is able to facilitate a globally harmonized and standardized implementation process....avoiding inappropriate application due to misunderstandings or change resistance”.

1.18.2 Previous aircraft incidents reported at the FTO

There were two (2) occurrences of similar nature at the Training Organisation both in March 2011.

1. Registration A6-MPA, on 14th March 2011, Cessna 172S, at Sharjah International Airport, a student pilot on his 38th Sortie, VFR Navigation cross country, on landing departed the runway after touch down to the left onto the rough surface causing damage to the propeller and left hand wing tip. ²⁰
2. Registration A6-MPL, on 31st March 2011, A/C Total Time of 3934.4 hrs, at Sharjah International Airport, a student pilot from the FTO on his first solo flight, during the landing phase, the aircraft bounced on the initial touchdown followed by a severe and uncontrollable veer to the left and finally a nose down pitch which resulted in a propeller strike. ²¹

The repair was completed and the major parts replaced were the engine, propeller, new mounts and other items as mentioned on the Airframe Maintenance Log.

Aircraft CRS was signed on 20th June 2011.

1.18.3 Crosswind Approach and Landing per the FTO Training Manual

As part of the cadet pilots' classroom training reference FTO Standard Operating Procedures (SOP) section 11.3 issue 2, Crosswind landing is discussed and also practiced during their flying exercises. On the day of the incident, the wind direction was 290 degs at speed of 10 knots. The wind speed as per the FTO TM was within allowable limits for the CP to the land the aircraft.

However, during the investigation, there was no evidence that there was specific practice and emphasis during classroom training as well as training flights on guidance to the student pilots on recovery of aircraft in case of veering off the runway during the landing role.

1.18.4 Occurrences on Aircraft C172 MSN 172S9137

1.18.4.1 Under Registration N533R

Under registration N533ER on 07th May 2007, Tachometer (Tach) Time 3750.7 hrs, at Payson Airport, Payson, Arizona, a student pilot was flying under VFR rules on his first VFR solo cross country. During landing phase, due to high approach airspeed, the pilot attempted to land long and allow the airspeed to decay resulting in the airplane contacting the runway 1700 feet beyond the threshold with the nose wheel and the propeller striking the runway first. The airplane bounced, and landed hard approximately 95 feet further down the runway, again

²⁰ Reference UAE GCAA ROSI-3169-110315-AOAW.

²¹ Reference UAE GCAA ROSI-3340-110331-AOAW and Flight Training Organization CFI report dated 31st March 2011.

sustaining propeller strikes. It became airborne for another 125 feet before striking the runway and departing to the left, passing through turf and coming to rest on the adjacent taxiway.

The airplane sustained substantial damage including a buckled and split firewall, propeller strikes and a destroyed nose wheel tire and bearing.

As per the Airframe Maintenance Log, extensive and major repairs including replacement/repairs of major structural parts, replacement of engine/propeller, removal/installation/rigging of most flight control surfaces and other repairs/replacement of parts was carried out by a FAA Approved Repair Station. The aircraft was eventually returned to service on 07th Aug 2007.

1.18.4.2 Under registration A6-MPL

Under registration A6-MPL, on 31st March 2011, aircraft total time of 3934.4 hrs, at Sharjah International Airport, a student pilot from the FTO on his first solo flight, during the landing phase, the aircraft bounced on the initial touchdown followed by a severe and uncontrollable veer to the left and finally a nose down pitch which resulted in a propeller strike.

The repair was completed and the major parts replaced were the engine, propeller, new mounts and other items as mentioned on the Airframe Maintenance Log. Aircraft returned to service on 20th June 2011 after the repair work.

Under registration A6-MPL, on 05th December 2011, aircraft total time of 4174.6 hrs which is the serious incident being investigated.

1.19 Useful or effective investigation technique

No useful or effective investigation technique was used.

2 Analysis

To be determined

3. Conclusions

3.1 Findings

To be determined



GCAA
دولة الإمارات العربية المتحدة
الهيئة العامة للطيران المدني
UAE General Civil Aviation Authority

3.2 Causes

To be determined.

4. Safety Recommendations

To be determined

Appendix 1: Aircraft Damages – RH Wing and Propeller



Appendix 2: Equipment Damages- Damaged Airfield Ground Lighting

